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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/298,160	04/22/99	CUSTER	D MI22-1172
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021567 IM62/0515  
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EXAMINER

OLSEN, A

ART UNIT	PAPER NUMBER
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1746

*7*

DATE MAILED:

05/15/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
**09/298,160**

Applicant(s)  
**Custer et al.**

Examiner  
**Allan Olsen**

Group Art Unit  
**1746**



☒ Responsive to communication(s) filed on Apr 22, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-5 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-5 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892 ✓

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3, 5 & 6 ✓

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,340,437 issued to Erk et al. (hereinafter, Erk).

Erk teaches a method of etching and polishing semiconductor wafers that involves injecting a gas into an aqueous etchant. Erk's method includes an embodiment in which the injected gas is dissolved in the etchant until the saturation limit is reached. See: col. 3, lines 20-68; col. 7, lines 54-55; col. 8, lines 13-29 and 57-60.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,817,652 issued to Liu et al. (hereinafter, Liu).

Liu teaches a method of cleaning semiconductor wafers that involves injecting a gas into an etchant. Liu does not explicitly teach what the concentration of the dissolved gas that is obtained by the method. However, the data provided by Liu shows that Liu has conducted

Art Unit:

studies at gas pressures as high as 1,680 psi. This high pressure would inherently produce a solution having a dissolved gas concentration of at least 200 ppb. See col. 5, lines 13-25; col. 6, lines 48-54; col. 7, lines 26-67.

***Conclusion***

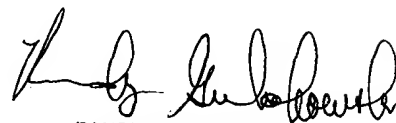
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Each of US Patents: 5,800,626; 5,849,091; 5,858,106; 5,887,605; and 6,039,815 have teachings that provide the basis for a 102 rejection over independent claim 1, however, given the above 102(b) rejections the examiner considers it unnecessary to make these additional rejections at this time.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is (703) 306-9075. The examiner can normally be reached on Monday through Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (703) 308-4333. The fax phone number for this Group is (703) 305-7719.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Allan Olsen, Ph.D.  
May 8, 2000

  
RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

	L #	Hits	Search Text
1	L1	11288	dissolv\$ near gas\$
2	L2	34252	gasif\$ ozonated ozone adj water
3	L3	45037	1 2
4	L4	1806	3 and (216/\$.ccls. 134/\$.ccls. 438/\$.ccls. 252/\$.ccls. 137/\$.ccls. 239/\$.ccls. 451/\$.ccls.)
5	L5	353	4 and semicon\$
6	L6	97	4 and polish\$
7	L7	251	(4 AND etch\$)
8	L8	309	4 and (dissolved adj gas\$)
9	L9	45	8 and (polish\$ etch\$)
10	L11	33	9 and semicon\$